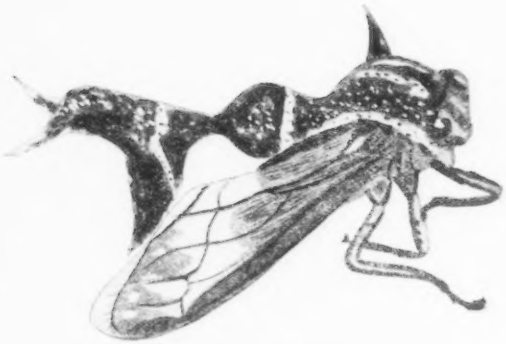
Vol. XIV. No. 2

ENTOMOLOGICAL NEWS



Heteronotus vulnerans.

FEBRUARY, 1903.

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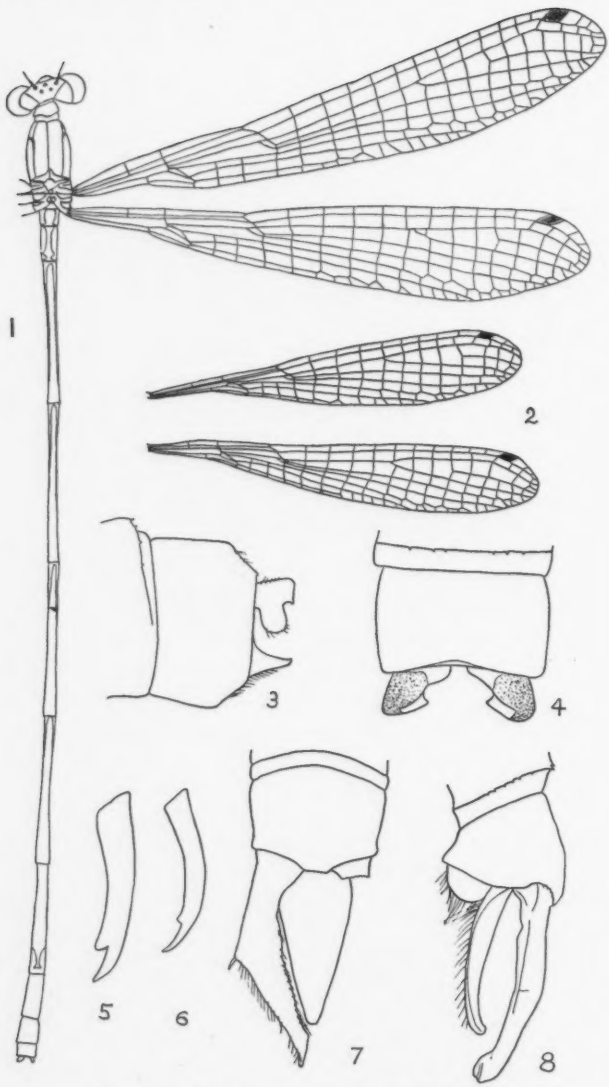

FIGS. 1, 3-5, TELAGRION? DÆCKII; 2, 6, T. LONGUM; 7, 8, SOMATOCHLORA PROVOCANS.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XIV. FEBUARY, 1903. NO. 2.

CONTENTS:

Calvert—Additions to the Odonata of New Jersey, with descriptions of two New Species..... 33
Dyar—Culex restuans Theobold..... 41
Laurent—Moths (Heterocera) of Eastern Pennsylvania..... 43
Bowditch—Collecting Notes, 1902..... 45
Snyder—A Day's Experiences..... 50
Viereck—Bombus Gelidus Cress., Bombus Kincaidii Ckll..... 54
Editorial..... 55
Notes and News..... 56
Doings of Societies..... 57

Additions to the Odonata of New Jersey, with Descriptions of two New Species.

BY PHILIP P. CALVERT, PH. D.

(With Plate III.)

The materials which have afforded the present paper are from two sources:

1. The collections made in Southern New Jersey by Mr. Erich Daecke, during the Summers of 1900–02. They are the source of all the additional species here added to the list I prepared for Prof. John B. Smith's "Insects of New Jersey" (Supplement to Ann. Rep. N. J. State Board of Agriculture, pp. 65–75, January, 1900).

2. A few species gathered by my wife and myself at or near Lake Hopatcong on the dividing line between Morris and Sussex Counties, Sept. 2–15, 1902. The most interesting of these were obtained in an unused wooden boathouse near Chestnut Point on the lake. Visiting this on September 14th, we found great numbers of exuviæ of Odonata and of large spiders; dead

teneral imaginal Odonata (as well as more or less crumpled detached Odonate wings) were entangled in the remains of spiders' webs. The open doors of the boathouse were on the north side, the opposite south wall was not so easily accessible from the water as were the east and west walls on which the exuviæ were chiefly found. On these two walls they reached to a height of twelve feet above the water. Each of these two walls had a single window in the middle, that of the west wall being closed, that of the east wall freely admitting light. We were not able to find any correlation in the distribution of the exuviæ with the relative amount and distribution of light.

We collected most of the unbroken Odonate exuviæ seen in this boathouse and I have identified them as follows: Agrioninæ 1 sp. 1 ♂ 4 ♀, *Gomphus* sp. (*sordidus* group) 4 ♂ 1 ♀, *Dromogomphus spinosus* 2 ♂ 2 ♀, *Didymops transversa* 4 ♂ 1 ♀, *Neurocordulia obsoleta* 15 ♂ 16 ♀, *Tetragoneuria cynosura* 8 ♂ 10 ♀, *Epicordulia princeps* 1 ♂ 4 ♀, in all 73. The almost entire teneral Odonata found in the remains of webs were *Dromogomphus spinosus* 1 ♀, *Neurocordula obsoleta* 1 ♀, and *Epicordulia princeps* 1 ♀; the abdomen of *D. spinosus* and the thorax of *E. princeps* had been partly eaten by something. The spiders' exuviæ have been kindly determined by Dr. T. H. Montgomery, Jr., as of *Dolomedes urinator* or *D. idoneus*. As the above-named Odonata are usually seen flying not later than July in this region, it is quite likely that the transformations had occurred long previous to our visit to the boathouse.

The general condition of affairs strongly suggested that the spiders had preyed upon the newly transformed dragonflies,* a possible explanation of the generally observed rarity of such a species as *Neurocordulia obsoleta* in the imago state as contrasted with the abundance of its exuviæ found here.

Prof. Needham has called attention† to a similar contrast in the genus *Ophiogomphus*, for which a similar explanation is perhaps to be sought.

* Years ago I observed young *Dolomedes sexpunctatus* feeding upon the soft parts of recently transformed imagos of *Ischnura verticalis* and *I.* (*Nehalennia*) *posita* which were not yet able to fly. Trans. Amer. Ent. Soc., xx, p. 205, 1893. See also McCook, Amer. Spiders and their Spinning Work, iii, p. 23, 1893.

† Can. Ent., xxix, p. 183; xxxi, p. 233.

ADDITIONS.

(Species new to the State list are marked * ; months and days are indicated by Roman and Arabic numerals respectively ; all unmarked records are due to E. Daecke, those marked C. to the writer, who has made all the identifications).

Calopteryx apicalis Burm. Iona VI, 8, 16.
Hetærina americana Fabr. Berkshire, Morris Co., IX, 12, C.
Lestes unguiculatus Hag. Minnisink IX, C. Da Costa VII, 20, 27.
L. forcipatus Ramb. Belleplain IX, 8.
L. vigilax Selys. Lake Hopatcong IX, 14, C.
L. inequalis Walsh. Riverton VII, 19, A. R. Satterthwaite.
Argia tibialis Ramb. Laurel Springs VII, 21.
A. apicalis Say. Laurel Springs VII, 21.
A. bipunctulata Hag. Clementon VI, 3, H. L. Viereck.
**Erythromma conditum* Hag. Iona V, 26, 1902, "everywhere."
**Nehalennia gracilis* Morse. Iona VII, 13.
Enallagma civile Hag. Manumuskin VI, 11.
E. carunculatum Morse. Lake Hopatcong IX, 5, 8, C.
E. traviatum Selys. Lucaston VII, 2.
E. geminatum Kell. Lake Hopatcong IX, 8, 14, C.
E. divagans Selys. Iona VI, 8.
E. signatum Hag. Lake Hopatcong IX, 6, C.; Bear Pond, Sussex Co., IX, 15, C.
E. pollutum Hag. Lake Hopatcong IX, 6, 8, 14, C.
**Telagrion? daeckii* n. sp. Manumuskin VI, 23.
**Gomphus albistylus* Hag. (*nævius* Hag.) Lucaston VI, 13.
**G. plagiatus* Selys. Manumuskin IX, 3.
Dromogomphus spinosus Selys. Lake Hopatcong IX, 14, exurviæ and dead imago, C.
Epiæschna heros Fabr. Manumuskin, VI, 11.
Boyeria vinosa Say. A male flying in a railroad passenger car between Bound Brook and High Bridge IX, 2, C.
Basiæschna janata Say. Manumuskin IV, 24.
Anax longipes Hag. An individual seen at Lucaston VI, 27 and VII, 2, 1902, by Mr. Daecke, was probably this species, judging from his description.
Epicordulia princeps Hag. Lake Hopatcong IX, 14, exuviæ and dead imago, C.
Tetragoneuria semiaquea Burm. Manumuskin V, 21.
**T. spinosa* Selys. Clementon V, 3.
Helocordulia (*Neurocordulia*) *uhleri* Selys. Manumuskin IV, 24 ; Cumberland Co., V, 5.
Neurocordulia obsoleta Say. Lake Hopatcong IX, 14, exuviæ and dead imago, C.
Dorocordulia (*Somatochlora*) *lepida* Hagen. Iona V, 26.
Somatochlora filosa Hag. Iona VIII, 25 ; Anglesea IX, 8.

S. provocans, n. sp. Da Costa VII, 16.
Tramea carolina Hag. Lucaston IX. 2; Alloway VIII, 25.
Libellula axillena var. *incesta* Hag. Bear Pond, Sussex Co., IX, 15, C.
L. semifasciata Burm. Laurel Springs VI, 3; Glassboro VII, 9.
Plathemis trimaculata De Geer. Manumuskin VI, 11.
Celithemis ornata Ramb. Lucaston IX, 2. Da Costa VII, 4.
C. elisa Hag. Manumuskin VI, 24.
**C. fasciata* Kirby. Lucaston VI, 27, VII, 2, "fifteen to twenty seen."
**Sympetrum albifrons* Hag. Belle Plain IX, 16, 1901, IX, 8, 1902, "on which day I took 15 ♂ and could have taken three times as many; they were very local;" Manumuskin IX, 15, 1902.
S. obtrusum Hag. Belle Plain IX, 8.
S. corruptum Hag. Several miles back of Barnegat VII, 25, 1900 (W. T. Davis in litt., Nov. 1, 1901).

With these additions the Odonate fauna of New Jersey now comprises 101 species and varieties distributed as follows: Calopteryginæ 3, Agrioninæ (*sensu Selysii*) 34, Gomphinæ 8, Cordulegasterinæ 1, Aeschninæ 10, Cordulinæ (*sens. Selysii*) 13, Libellulinæ 32.

DESCRIPTIONS OF NEW SPECIES.

Telagrion? daeckii, n. sp. (Pl. III, figs. 1, 3-5).

♂. Pale blue, with the following black markings: a mid-basal dot on the labrum, a pair of dots and a transverse basal line on the nasus, lines in the grooves on the vertex, some of which (together with a black transverse stripe across the rear of the head and a black stripe along each eye margin) enclose a pair of large triangular pale blue postocular spots; a pair of curved stripes on the middle prothoracic lobe, a mid-dorsal thoracic stripe hardly wider than the carina, a short stripe at the lower end of the humeral suture and a still smaller one at its upper end, these two connected by a narrow black stripe in the New Jersey ♂, a very short line at the upper end of the second lateral thoracic suture; a mid-dorsal stripe with some metallic green reflections on abdominal segments 1-6 for almost the entire length of each segment (except for a narrow, transverse, basal, pale blue ring on 3-6, which is also present on 7), widened anteapically on 2-6; a dorsal stripe on the basal three-fourths to four-fifths of 7, prolonged slightly farther toward the apex as a mid-dorsal line; a superior stripe on all the femora, and an anterior (external) line on the first tibiæ. The apex of 7 and all of 8-10 except the sternum of 8 are pale blue.

Hind margin of prothorax convex, entire, flattened slightly on each side instead of being equally curved throughout.

Third tibiæ with six well-developed spines on the anterior (outer) side. All the tarsal claws with a distinct tooth which is considerably smaller than the tip of the claw itself.

Tenth abdominal segment less than half as long as 9, smooth and simple above, its hind margin with a wide but shallow concavity.

Superior appendages pale, black at tip, about half as long as 10; viewed from above, somewhat divergent, especially on the inner sides, with a small ante-apical denticle on the inner side; viewed in profile, the upper margin is straight, the apex truncated almost at right angles, upper apical angle slightly rounded, lower apical angle produced slightly downward as a minute point, lower margin of the appendage with an oblong process which is as wide and nearly as long as the appendage itself, projecting downward and slightly backward (caudad). Inferior appendages, viewed from below, produced on the outer side into a slender conical process which reaches as far backward as do the superiors and whose apex is acute and slightly upturned.

Wings hyaline; pterstigma brownish to blackish with a narrow linear yellow border immediately within the enclosing veins, surmounting less than one cell, costal margin the longest, proximal the shortest, distal and posterior subequal; arculus at the second ante-cubital, its upper limb slightly longer than the lower; upper side of the quadrilateral on the front wings less than half as long as the lower side, on the hind wings almost half as long as the lower side; inferior sector of the triangle arising at the submedian cross-vein (Florida ♂), or very slightly in front thereof (less than the length of the cross-vein, New Jersey ♂), and ending proximal to the level of origin of the nodal sector; superior sector of the triangle ending between the levels of origin of the nodal and ultra-nodal sectors; submedian cross-vein nearly mid-way between the levels of the first and second antecubitals; front wings with 12 (Florida ♂), 11 (N. J. ♂) postcubitals, the nodal sector arising nearest the sixth; hind wings with 9–11 postcubitals, the nodal sector arising nearest the fifth; ultra-nodal sector arising 3 (2 in one wing) cells proximal to the inner brace vein of the pterostigma on the front wings, two cells on the hind wings; three antenodal cells on all the wings.

Dimensions.—Abdomen 35–36.5, hind wing 21.5–23 mm.

Habitat.—Manumuskin, New Jersey, June 23, 1902, one male, by Mr. E. Daecke. Enterprise, Florida, May 18, one male, Museum of Comparative Zoology (Cambridge, Mass.).

Named for the active and enthusiastic collector who has added so much, during the last few years, to knowledge of the New Jersey insect fauna.

Provisionally, I refer this species to the Brazilian genus *Telagrion* Selys, for reasons given below; it may be that the discovery of the female will indicate other relationships. In making comparisons of this species with *Telagrion*, I have used Selys' descriptions* of course, and also two males of *T. longum* from Brazil, one of which bears the label "*A. longissi-*

* Bull. Acad. Roy. Belg. (2), xlii, pp.966–973. 1876.

mum'' in de Selys' handwriting ;* these two males are from the Museum of Comparative Zoology ; both have lost abdominal segments 7–10. De Selys describes this species as having ''Onglets obscurs à dent inférieure beaucoup plus courte que la supérieure ;'' I find the tooth of the tarsal claws represented only by a minute rudiment in these two males (see Pl. III, fig. 6).

In favor of the relationship of *daeckii* to *Telagrion* are the following agreements in structure (compare figs. 1 and 2, Plate III) : (*a*) The shape of the pterostigma and the number of cells surmounted by it ; (*b*) the shape of the quadrilateral ; (*c*) the origin of the inferior sector of the triangle at the submedian cross-vein (''nervule basale post-costale'' of de Selys, 1876), as well as (*d*) its termination proximal to the level of origin of the nodal sector ; (*e*) the termination of the superior sector of the triangle between the levels of origin of the nodal and ultra-nodal sectors ; (*f*) the number of postcubitals ; (*g*) the presence of pale postocular spots ; (*h*) the small number of spines on the outer side of the third tibiæ ; (*i*) the great proportionate length of the abdomen and (*k*) the simple character of its tenth segment.

It is true that there are some disagreements with *Telagrion*, such as the differently shaped superior appendages of the male and the point of origin of the nodal sector (compare figs. 1 and 2, Plate III ; de Selys gives no data on this last feature). I think, however, that these are not as great as the differences between *daeckii* and any other known genus which might be suggested, and I do not consider the erection of a new genus for *daeckii* justifiable on our present knowledge. Of the genera at present known from North America, one would probably think of *Enallagma* as furnishing the nearest relationship for *daeckii*, but the characters above marked *c*, *d*, *i*, are opposed thereto.

It may be well to repeat here de Selys' remark (*l. c.*, 1876, p. 967): ''Il est possible qu'il faille encore subdiviser ce sous-genre [*Telagrion*], car les espèces du 1 er groupe [*fulvellum*,

* *Longissimum* was a name employed by Hagen in his List of Neuroptera of South America (Syn. Neur. N. Am., p. 310. 1861), but without description. It is cited by de Selys (*l. c.*, 1876, pp. 970, 972) but abandoned for *longum*.

inversum, *longum*] sont chacune d'un type different sous le rapport de la proportion des appendices anals, et quant au *mecistogastrum* qui constitue le 2e groupe, il est encore plus caracterisé par son abdomen énormément long [50–52 mm. ♂, 37–39 ♀]."

Somatochlora provocans, n. sp. (Pl. III, figs. 7, 8).

♂. Most of the face, including the labium, yellow; free margin of the labrum narrowly edged with black, a pair of small black spots on the nasus; frons superiorly metallic-violet or -greenish-blue, which extends on to the anterior surface but does not reach the lower margin; the yellow on each lateral surface of the frons is consequently connected with its fellow of the opposite side by a transverse, inferior frontal, yellow band; vertex metallic blue-violet, occiput and rear of the eyes black; labrum, occiput and rear of the eyes with numerous pale hairs, rest of the head (except the eyes) with many blackish hairs.

Front and hind prothoracic lobes very pale yellow almost white, middle lobe dark brown; hind margin of hind lobe convex, entire.

Thorax and abdomen dark metallic-violet or -green with the following yellow markings: upper end of mid-dorsal thoracic carina, anterior calli, inter-alar dorsal area, a rather wide but isolated mesepimeral stripe, a sinuous interrupted line just back of the metastigma, a fairly wide metepimeral stripe which passes on to the metasternum and unites with its fellow of the opposite side; a narrow line along the apex of abdominal segment 1; an oblique, inferior stripe each side at base of 2; a transverse apical stripe on 2 running out inferiorly on to the posterior margin of the genital lobe each side; a triangular spot on each side of the mid-dorsal line of 3, occupying the basal fourth of the segment. Conspicuous hairs on the thoracic dorsum and dorsum of first two abdominal segments (pale) and on the genitalia of 2 (dark).

Legs black with the following yellowish: most of the coxæ, first trochanters, most of the first femora except near the knees, second femora superiorly at base. Antero-inferior row of spines on all the femora terminating in a longer and stouter spine. Not only do the first tibiæ have the inferior carina in their distal third, as described for the Cordulinæ generally by de Selys in 1871, but a similar pale inferior carina extends on almost the entire length of the third tibiæ.* The second tibiæ are not carinate in this manner.

* Such a carina, which appears to be hollow within, exists on the third tibiæ of the males, but never of the females, of all species of Cordulinæ (*sensu Selysii*) which I have been able to examine. A similar carina is found also on the second tibiæ of species of *Didymops*, *Epophthalmia*, *Neurocordulia*, etc. Its nature and distribution deserve special examination.

Superior appendages not quite as long as 9 + 10, about twice as long as 10, black; viewed from above, divergent in basal half, convergent in apical half, except at the extreme apex where they are parallel or slightly divergent, inner edge of each appendage more or less regularly curved throughout, but the outer edge strongly angulate at mid-length, apex slender, compressed, but not acute; viewed in profile, each appendage is almost straight in its basal half, regularly, but not abruptly, curved downward in its apical half, two slight, inferior convexities are evident in the basal half, the second longer than the first.

Inferior appendage about three-fourths as long as the superiors; viewed from below, elongate, triangular, about three times as long as its width at base, sides straight, apex rounded, entire; in profile view, its margins parallel, upper margin forming a shallow concave curve.

Wings clear, hyaline, venation black except the costals which are lined with yellow. Pterostigma almost black, only one cross-vein beneath it and that near its proximal end.

Front wings: 7-8 antecubitals, 5-6 postcubitals, triangles 2-celled, internal triangles 3-celled, one submedian cross vein distal to the level of the first antecubital; three or four post-triangular cells, then two rows to the level of separation of median and principal sectors, than three rows and two rows alternating (Da Costa ♂), or two rows almost to the margin (Formosa ♂), 3-4 cells at margin of wing; membranula cinereous.

Hind wings: 5 antecubitals, 7-9 postcubitals, triangles 2-celled (free in one wing Formosa ♂), internal triangles free, one other submedian cross-vein which is proximal to the level of the first antecubital; two or three post-triangular cells, then two rows soon increasing to 9-12 marginal cells; anal triangle 2 (Da Costa ♂) or 3 (Formosa ♂) -celled; membranule cinereous, basal fourth or less white.

Dimensions,—Abdomen (incl. apps.) 38, sup. apps. 3, hind wing 35, pterostigma 2.5, third femur 8 mm.

♀ unknown.

Habitat—Da Costa, Atlantic County, New Jersey, July 16, 1901, one male by Mr. E. Daecke. Formosa Bog, on road northward from Mt. Pleasant R.R. Station, Cape May County, New Jersey, July 22, 1892, one male by P. P. Calvert.

Both Mr. Daecke and myself have met this species along the sandy roads through the pine barrens. The insect usually keeps at a considerable distance above one's head, both when in flight and at rest. We have seen other individuals which we believe to be of this species, but in spite of special trips to secure them and patient waiting in the hope that they might come within

one's reach, only these two males are known to have been taken in ten years.

In the coloring of the thorax, this species approaches *S. filosa;* its appendages suggest those of *S. tenebrosa;* but *provocans* is manifestly quite distinct from these and every other described species.

EXPLANATION OF PLATE III.

Figs. 1, 3-5.—*Telagrion? daeckii* n. sp. ♂. 1, × 3½; 3 and 4, left profile and dorsal views respectively of the tenth abdominal segment and appendages × 20; the stippled parts in 4 represent the upper branch of each superior appendage; 5, a third tarsal claw × 90.

Figs. 2, 6.—*Telagrion longum* Selys, ♂, Brazil, 2, wings × 3½; 6, a third tarsal claw × 90. **N. B.**—By an oversight the drawings of the wings in fig. 2 were misplaced so that the *upper* figure is that of the *hind* wing, the *lower* figure that of the *front* wing.

Figs. 7, 8.—*Somatochlora provocans* n. sp., ♂, dorsal and left profile views respectively of the tenth abdominal segment and appendages × 10.

All these figures have been drawn with the aid of the camera lucida.

Culex restuans Theobald.

By Harrison G. Dyar.

This mosquito was described from a single ♀ specimen, caught upon a window pane in Canada. It differed from *pipiens*, as pointed out by Theobald, in the presence of certain pale spots on the thorax and in the greater width and regularity of the abdominal pale bands. I have now a very considerable number of specimens of this form, and it appears that these characters do not always hold. The abdominal banding is quite characteristic of the females, but it does not serve to differentiate the males from the same sex of *pipiens*. The thoracic spots, when present, are decisive, but they often become small, rarely obsolete. Mr. Coquillett has carefully examined the specimens and has detected another character, namely, a short pale banding at the extreme ends of the hind tarsal joints, which is absent in *pipiens*, so that the species may be differentiated by this character when the others fail.

The larva separates itself from all yet known by having a long breathing tube and the antennal tuft before the middle of

the joint. The other-long tubed larvæ have the tuft at or beyond the outer third of the joint. Another, more minute character, which can only be well seen in mounted specimens, is the peculiar shape of the mentum. It is unusually small, the sides long, straight, with only a few teeth, the apex low-triangular, with about 25 regular even teeth whose bases run deeply as grooves two-thirds the depth of the strongly chitinized portion.

I obtained such larvæ from cold spring pools in Center Harbor, New Hampshire; but they are not confined to such places. At Durham, N. H., I took them from a tub set in the woods for watering cattle, and at Cabin John, Maryland, from a pool shaded by bushes and even from rain puddles in the tow-path of the canal. Larvæ were sent me by Mr. J. Turner Brakeley of Lahaway, N. J., from his "*triseriatus* kettle," an old porcelain-lined kettle that had been left standing near his house. A specimen was bred also from an old tub on the grounds of the Department of Agriculture in the District of Columbia. This tub was swarming with *pipiens* larvæ and only the one *restuans* emerged from a lot of collected pupæ. It seems from the above that the larva occurs rathey widely distributed, but not in any great local abundance. It may be taken near houses, mixed in small proportion with *pipiens*.

The eggs are laid in floating, boat-shaped masses as in *pipiens*. The larvæ pass four stages as usual. They are to be found all summer and fall and very possibly may survive the winter in favorable situations. As to the habits of the adults, I have no data. The only captured specimen I have is a male taken by sweeping with the net. The probability is that the habits resemble those of *pipiens*, and the insect hibernates as adult. The species seems of small economic importance. I have not observed any specimens biting.

THE ALSTEAD SCHOOL OF NATURAL HISTORY will open its fifth session on Tuesday, June 30, 1903. The school aims to give its pupils such acquaintance with living nature as comes only from systematic study, under competent leadership, *out-of-doors*. The classes study at first hand the history written in the features of the landscape; the activities and adaptations of plants and insects; the haunts and habits of nesting birds. The knowledge gained in this way is real knowledge, and it lasts.—W. L. W. FIELD, Milton, Mass.

The Moths (Heterocera) of Eastern Pennsylvania.

By Philip Laurent.

The following list, although of a preliminary character, is nevertheless, as complete as it is possible to make it at the present time. No doubt future research will add many species to the list, as many species known to occur on the other side of Pennsylvania's boundary line will eventually be found in Eastern Pennsylvania. The Micro-Lepidoptera, for some reason or other, have been shunned by the majority of Pennsylvania "field workers," so that the list is rather small and represents but a small portion of the species that undoubtedly are to be found in this part of the State. In the present list I have only admitted such species of which I have positive proof of their occurrence in Eastern Pennsylvania, no species being listed on account of the fact that it is known to occur in adjacent States. It is hoped that the list will not only prove interesting, but useful, particularly to those who are interested in the geographical distribution. The basis for the present list is principally the collection of the Amer. Ento. Soc., and the material contained in my own collection. To Mr. Chas. Blake, Mr. James Johnson, Mr. Conradi, Dr. Henry Skinner, Prof. Chas. Johnson, Mr. Philip Nell and Mr. Frank Haimbach, who gave me free access to their collections, and assisted me in the preparation of the list, I am greatly indebted. To Prof. John B. Smith, Prof. Fernald and the late Rev. Geo. D. Hulst I am under great obligations for their kindness in identifying much of the material in my collection, and I take this opportunity to thank all of these gentlemen for kindnesses rendered. It is my intention to publish at no distant date a supplementary list, and I, therefore, request the reader to inform me of any inaccuracies that may be observed in the present list; which I think will prove to be but few and far between. No doubt many of the species marked rare are only rare in our collections, and when we learn when and where to look for them they will prove to be common enough. The list is arranged in accordance with Prof. John B. Smith's list of the "Lepidoptera of Boreal America."

Sphingidæ.

Hemaris tenuis *Grt.*, rare.
" diffinis *Bdv.*, rare.
" axillaris *G.* & *R.*, rare.
" thysbe *Fab.*, common.
" ruficaudis *Kir.*, rare.
Aellopos fadus *Cram.*
" tantalus *Linn.*, rare.
Enyo lugubris *Linn.*, rare.
Amphion nessus *Cram.*, rare.
Thyreus abbotii *Swains.*, common.
Deidamia inscripta *Harr.*, rare.
Deilephila lineata *Fab.*, common.
Choerocampa tersa *Linn.*, rare.
Philampelus vitis *Linn.*, rare.
" pandorus, *Hbn.*., common.
Philampelus achemon *Dru.*, rare.
Ampelophaga chœrilus *Cram.*, rare.
Ampelophaga myron *Cram.*, common.
Ampelophaga versicolor *Harr.*, rare.
Dilophonota ello *Linn.*, rare.
" obscura *Fab.*, rare.
Protoparce celeus *Hbn.*, common.
" carolina *Linn.*, common.
Protoparce rustica *Fab.*, rare.
" cingulata *Fab.*, rare.
Sphinx kalmiæ *S.* & *A.*, rare.
" drupiferarum *S.* & *A.*, rare.
" gordius *Cram.*, rare.
" luscitiosa *Cram.*, rare.
" chersis *Hbn.*, rare.
" eremitus *Hbn.*, rare.
" plebeius *Fab.*, rare.
Dolba hylæus *Dru.*, rare.
Chlænogramma jasminearum *Bdv.*, rare.
Ceratomia amyntor *Hbn.*, common.
" undulosa *Walk.* common.
Ceratomia catalpæ *Bdv.*, common.
Triptogon modesta *Harr.*, rare.
Smerinthus geminatus *Say.*, common.
Paonias excæcatus *S.* & *A.*, common.
Paonias myops *S.* & *A.*, common.
Cressonia juglandis *S.* & *A.*, rare.

Sesiidæ.

Melittia ceto *Westw.*, common.
Trochilium apiforme *Linn.*, rare.
" tibiale *Harr.*, rare.
Sannina exitiosa *Say.*, common.
Sesia pictipes *G.* & *R.*, rare.
" acerni *Clem.*, common.
" tipuliformis *Linn.*, common.

Thyridæ.

Thyris maculata *Harr.*, common.
" lugubris *Bdv.*, common.
Platythyris oculatana *Clem.*, rare.

Agaristidæ.

Alypia octomaculata *Hon.*, common.
Alypia lorquinii *G.* & *R.* rare.
Eudryas unio *Hbn.*, common.
" grata *Fab.*, rare.

Syntomidæ.

Lycomorpha pholus *Dru.*, common.

Pyromorphidæ.

Pyromorpha dimidiata *H.-S.*, rare.
Acoloithus falsarius *Clem.*, rare.
Acoloithus americana *Harr*, common.

Ctenuchidæ.

Scepsis fulvicollis *Hbn.*, common.
Ctenucha virginica *Charp.*, rare.

Lithosiidæ.

Nola ovilla *Grt.*, rare.
" melanopa *Zell.*, rare.

Hypoprepia fucosa *Hbn.*, rare.
Cisthene subjecta *Smith.*, rare.
Euphanessa mendica *Walk.* common.
Ameria unicolor *Rob.*, rare.

Arctiidæ.

Cydosia aurivitta *G.* & *R.*, rare.
Crocota rubicundaria *Hbn.*, rare.
" ferruginosa *Walk.*, rare.
" opella *Grt.*, rare.
" nigricans *Reak.*, rare.
Utetheisa bella *Linn.*, common.
" var. ornatrix *Linn.*, rare.
Callimorpha clymena *Brown*, rare.
Callimorpha lecontei *Bdv.*, rare.
Arctia virgo *Linn.*, rare.
" phyllira *Dru*, rare.
" figurata *Dru.*, rare.
" decorata *Saund.*, common.
Arctia nais *Dru.*, common.
" phalerata *Harr.*, common.
Arctia anna *Grt.*, rare.
" virguncula *Kirby.*, rare.
" arge *Dru.*, rare.
Pyrrharctia isabella *S.* & *A.*, common.
Phragmatobia rubricosa *Harr.*, rare.
Leucarctia acræa *Dru.*, common.
Spilosoma virginica, *Fab.*, common.
Spilosoma latipennis *Stretch.*, rare.
" antigone *Strk.*, rare.
Hyphantria cunea *Dru.*, common.
Euchætes egle *Dru.*, common.
" collaris *Fitch.*, common.
Ecpantheria scribonia *Stoll.*, rare.
Halisidota tessellata *S.* & *A.*, common.
Halisidota caryæ *Harr.*, rare.

(To be continued.)

Collection Notes (Coleoptera).—1902.

By F. C. Bowditch.

Last year I captured at Dover, Mass., on red and black oak sprouts which had been killed by drought, about fifteen or twenty specimens of *Elytroleptus floridanus Lec.* All the specimens in my collection were from the South, and Messrs. Blanchard and Fenyes, to whom I gave specimens, were interested in its capture so far North. This spring I brought into the house some of the twigs on which I captured the beetles in 1901, and six imagoes hatched in April. On the 20th and 30th of May I paid visits to the same place and took upwards of one hundred specimens, most of them on the leaves. The weather, however, was most unfavorable and I failed to learn more of its habits.

Five examples of *Caliodes nobilis Say* occurred at Dover in June on oak stumps under the tender green sprouts which come from the stumps the first year after the tree is cut. The beetle is very lively, and upon being disturbed runs very

rapidly and takes flight, and unless the collector be looking particularly for it, its chances of escape are good. My captures heretofore have been one every few years.

Five examples of *Melasis pectinicornis Mels.* occurred at Marion, Mass., on a dead branch of *tupelo*. I took them at three different times during a period of two weeks, from July 7th to 25th, and always on the same branch. Each time I captured them I went carefully over every other *tupelo* in the neighborhood, but failed to strike any other specimen on any other tree.

Perigora atriceps Lec. occurred sparingly at Marion during the latter part of July and first half of August—some ten or twelve examples being beaten from thick matted grapevine and brush. *Microscopha clavicornis Lec.* was also taken at the same time rather plentifully.

To Mr. Blanchard belongs the credit of separating from some *Agabi* captured by us (Messrs. Blanchard, Fall and Bowditch), the rare *Agabus planatus Sharp.* It occurred in company with *Agabus gagates* in the debris in the bed of a small brook at Marion, in August. Later, in September, I took a few more of both sexes. It is easily distinguished from its allies by its thickened thoracic margin.

It was a good season at Marion for Stylopized wasps, and one example observed had seven *Xenos peckii Kirby* in its abdomen. I got five ♂'s and a number of wasps with the ♀'s protruding.

Xylotrechus sagittatus Fab. was very plenty in Marion in September on *freshly* cut white pine. After the tree has been down ten days or two weeks the beetle seems to almost leave it for fresher material. With it occurred great numbers of *Monohammus confusor Kirby*. Both these beetles were to be found on the wood within a few hours after it was cut.

For a day or two in July *Harmonia 12-maculata Gebl.* with *14-guttata-similis Rand.* were rather common on white birch, and I obtained a very good series of eighteen examples showing variations of marking, etc. Heretofore my captures have been one or two examples in a season. Also two examples which are wholly rufous and which I unite with it with a ?. These latter occurred on red cedar later in July.

Tropistermus 4-striatus Horn were very abundant in brackish pools at the rear of the beach at Marion.

It seems to have been a good season both here and at Marion for Buprestidæ. At Dover I took an example of *Cinyra gracilipes Mels.* (always rare here) on white oak, and saw numerous examples of *Chrysobothris azurea Lec.* running in a particularly impracticable tangle of brush and grapevine where I had only a very few moments to vainly try for them. Later I saw the same species at Marion, and took also a specimen of *Actenodes acornis Say.*

My summer was, however, too much broken up to admit of new explorations which I had planned at Marion.

Some Entomological Notes.

By F. F. Crevecœur, Onaga, Kansas.

In my experience in collecting insects, during the past dozen years, I have made some observations or discoveries which I have never seen in print, and as they may prove helpful or of interest to others engaged in the same diversion, I herewith give them.

During the early summer months, when insect life is rich in an abundance of species—many of which to amateurs will prove to be new to their collection—one will have much success in capturing an abundance of specimens, often replete with rare forms, by beating the weeds, bushes, shrubs and low limbs of trees on the leeward side of a grove or of the natural forest along our streams, if a strong wind is blowing at the time. In June I have taken many good things along the north side of the timber when the wind was blowing so strongly from the south that it was almost useless to look for anything on the prairie or in the depths of the timber, where one would naturally look for a rich fauna. A couple of years ago I took quite a number of *Ptosima gibbicollis* in a grove of redbud trees standing along the north side of a cornfield, the bulk of the forest being at the north, while the wind was blowing strongly from that direction. The past summer I took a number of rare species on the weeds fringing the north side of a small stream, sparingly grown to trees, which runs nearly due east, the wind being from the south when my captures were made. Here I

must record another observation, which perhaps partly accounted for my success the past summer. This fall I had occasion to beat the milkweed *Asclepias verticillata* for the beetle *Doryphora rogersii* and its larvæ. During the middle of the day I had no success at all, but near sundown, while getting the cows, I had the luck to capture one of the adult beetles and four of the larvæ. The next day I revisited the locality where my captures of the previous evening had been made, with the hope that I might take more specimens, but without success. Then I thought, perhaps, the time of day might have something to do with my capturing the beetle and its larvæ, so that evening I returned to the milkweed patch, and was rewarded with four additional larvæ. This set me to thinking why only at evening the species was taken, and I concluded that the species kept low down during the heat of the day, but when the sun had got low down and the dew commenced to gather on the lower grass the larvæ were driven from their retreat by the growing coolness caused by the gathering dew and climbed up higher where it was warmer. My captures along the stream, mentioned further up, were made near sundown, while getting the cows home, and I think the same cause was at work which made my collecting there so fruitful.

Riley, in his "Directions for Collecting and Mounting Insects," recommends the use of mucilage made of gum-shellac dissolved in alcohol, for mounting specimens on cardboard or pin-points. When I made my first attempt to dissolve some of the gum in alcohol, I was fortunate in making a perfect solution of the gum, with which I mounted many of my earlier specimens. After the lapse of a year or so, my mucilage had evaporated so much that it had become too thick for use, and I put in a little alcohol to thin it when, instead of becoming more fluid, it seemed to curdle and became unfit for use. I tried to prepare a new supply by using fresh gum, and was again disappointed, as the the gum instead of dissolving assumed a jelly-like state, which was useless for my purpose. I made several other attempts to make a supply of the shellac mucilage, but always without success. In desperation, I wrote

to several prominent entomologists for information as to the cause of my shellac not dissolving as it should, and in each instance my inquiries were ignored. I concluded that the entomologists were as ignorant as I as to the cause of the gum acting so contrary. Finally, something told me that the alcohol I was using contained a too great percentage of water, which prevented the dissolving of the gum, so I decided that at the first opportunity I would secure some absolute alcohol to experiment with. Last summer I had the fortune of securing a small quantity of the pure alcohol, and at the first occasion I used it to dissolve some of the gum was happily surprised to see how easily the gum was dissolved into a perfectly liquid mucilage.

I am sure I am not the only one who has seen the work of years in collecting reduced to a dirty mass of fragments and powder by the ubiquitous larvæ of some Dermestid beetle. I had tried many different plans for preserving my specimens—some recommended by older entomologists—such as moth-balls, corrosive sublimate, etc., and some of my own devising, such as lining the edges of my boxes with cotton to prevent the entrance of the pests, but all to no avail, as I often found to my chagrin, that in spite of all I did, the rascals would have the contents of some box which I had not recently opened reduced to ruins. When the hydrocyanic-gas treatment for scale insects came into vogue, I bethought me, perhaps, this method of exterminating insects might be used to advantage in preserving our cabinet specimens, and this summer I have put the method to practical trial and, so far, have found it an almost perfect success. For my specimens in cigar boxes,* I put a number of the boxes in a lard can, such as are used to ship lard from the packing-houses to the retailer, and then get all the ingredients ready, using a teacup to hold the solution, keeping the cyanide in readiness to drop into the solution in one hand and the lid to the can in the other, so as to quickly place it over the can the moment the cyanide is dropped into the sulphuric acid and water. To disinfect cases which are too large to put in the lard cans, I have the bottom of a small bot-

* The trouble is caused by faulty boxes.—EDITORS.

tle which easily will go into the case with the glass over it, and proceed in the same way as when using the lard can, only one must be careful to gauge the quantity of the solution to the size of the glass, as the least quantity overflowing when the cyanide is dropped in will ruin pins and specimens with which it comes in contact.

The beetle giving me about the only trouble is *Trogoderma tarsale*, which here seems to be two-brooded. The time that I find most successful to exterminate their larvæ is about the first of May and the fifteenth of August. Perhaps a little earlier for each brood would be as well, but in either case it should be done before they change to adults.

A Day's Experiences.

By A. J. Snyder.

We didn't think it rained in Colorado in July and August, but the past summer seems to have been exceptional everywhere. Our experiences during eight weeks in camp and field were such that we thought somewhat seriously of offering our services to the State as rain-makers, for it rained wherever we went.

The history of what befel us July 18th, 1902, in Colorado is also exceptional, but there were other days no less moist and many ideal.

It had rained the previous day, and cloudy weather had spoiled parts of several days before. As we looked away across the mountains it seemed to rain nowhere so frequently as in the little gulch at the head of the valley where we had camped, just at timber line. We therefore decided to make one more heroic attempt to add to our collection of the species which we found so abundant here and then move camp down the valley. We were up early and had soon completed our culinary duties, filled our pockets with the necessary boxes and lunch and had started up the trail. What I have called a gulch resembled a great basin with rugged peaks ascending on three sides, some of them to a height of 12,000 feet or more. These peaks all sloped back from the rim of the basin, and

when one finally reached their tops he found great sloping plains, somewhat tilted, to be sure, and covered with grasses, mosses and rocks. These mountain table lands always reminded us of the descriptions of the tundras or the moor-like expanses so common in Arctic America.

We started early, hoping to reach the summit in time to see the morning sun awaken the insect world. As we entered a little valley upon which the sunlight rested, and were a short distance beneath the top, we found the first awakening insects, *Colias meadii* and *Parnassius nanus*. After pausing a moment here, we followed a miner's trail on up among the rocks, where on one hand it was almost perpendicularly up and on the other down, with the path, a mere line, to separate the two perpendiculars. We were soon in the midst of a wilderness of rocks and winding ever upward, stopping now and then for breath, and on one or two projecting points waving a farewell to the camp—now a dot in the distance marked by two white spots—our tents. We next came to a dividing ridge and could look over on the farther side into another valley, with range after range of mountains in the distance and snow-capped summits everywhere, for what had been rain in camp the day before had been snow and ice a little higher. We paused upon a ledge some ten or twelve feet wide with almost straight descent on either hand. Just beyond a great rock rose, and in its shelter we crouched to escape the wind from the peaks beyond and above us and to enjoy the few moments of sunshine which instantly change these frigid regions into pleasant collecting grounds. Here we found butterflies also enjoying the shelter of the rocks and flitting about the arctic flowers. *Lycæna shasta*, *Colias meadii*, *Parnassins nanus* and *Chrysophanus snowii* like such places. Just above us on the slopes of the higher peaks is the home of *Chionobas* and *Melitæa*. Almost immediately clouds began to appear and the sunlight came to us only at rare intervals. We determined, however, to complete the ascent, and were soon finding frozen butterflies resting on the vegetation, and when the sunlight reached these chilled insects we saw them begin slowly to flit from place to place. In our pathway and on the sheltered

side of rocks we found Arctias too cold to move. A few minutes later we were upon the moor and the wind was searching every opening in our clothing and chilling us to the marrow. There were no rocks whose shelter we might seek here, but as we still had hopes of sunshine we bent our heads and pushed on, now and then starting a *Chionobas* which, carried by the wind, never stopped until it fell below the mountain crest and could rest in some sheltered nook. We sought out hollows in the earth, and dropping into them lay upon our backs trying to get warm. Near one of these shelters we found two old ptarmigans with their young and caught two of the little birds—beautiful creatures, like young chickens—and watched them until we could no longer endure the mother's anxiety and plaintive calls for her brood, then laughed to see them scurry away and imagine themselves hidden when they squatted in full sight among the scant vegetation.

The clouds became thicker, and when we could no longer endure the cold we decided to go back to the steep side of the range and descend into the gulch above camp hoping, if the sun came out, to find *Erebia magdalena* in the slide rock. It took but a few minutes to gain the protection of the rocks at the edge and to start upon our way down over the half mile or more of slide rock, where we did not dare to walk in a line for fear the ones above might dislocate rocks, which would go hurtling down upon those below.

The sun finally broke through the clouds and a few butterflies started to life at once. Within the rim of the basin is an old mine with a bin built for the storing of ore, and upon the floor of this bin we lay and enjoyed the reflected heat of the sun until some of the chill had departed, then worked on around the rim until in another great area of slide rock we suddenly started a *magdalena*. How one longs for these black beauties as he sees them flying royally away, moving so easily over the great fields of loose rock where one misstep may mean a broken limb. We were fortunate this morning, and three *magdalena* were taken. Then we found *Chrysophanus snowii* among some of the larger rocks and all heartily entered

into the pursuit. A quick eye, an accurate stroke and knowledge of just what to do next is essential here.

All unknown to us, and while we worked in the sunlight within the rim of the basin, a storm had been brewing, and we were unconscious of its approach until the edge of a great black cloud appeared over the rim, the sun disappeared, and snow flakes began to fall. Camp was more than a mile away, and no trail led downward. There was a hasty consultation, and then we began to let ourselves down almost in a bee line for camp. Then we ran, making our way through dwarf bushes, seeking places to cross the streams which came from the great snow banks above, and every moment the snow was coming down more rapidly. Fortunately the breath comes more easily in going down than up a mountain, and a few minutes brought us to camp. Safe in the shelter of our tents we watched the storm until the ground was white with snow.

In half an hour the sun shone, the snow began to melt and we at once packed up outfits and prepared to move down the valley a little over two miles into the shelter of the pine forest. Going up our mule team had exerted every muscle, stopped frequently, and on the steepest places there had been a man at each hind wheel. Going down was toward home, and the rocks were many, the mules frequently raised the driver from his seat as he braced his feet, applied the brake and threw his weight upon the reins. Ere we had gone a mile another cloud peeped over the rim of the basin and emptied its contents upon us. We reached the site of our new camp in the midst of a hard rain. Wood was abundant, but wet, and a campfire was impossible. We were not long in pitching our tents, getting all the bedding inside and starting the little sheet-iron stove to roaring with dry branches from the depths of the forest underneath trees so dense the rain seldom penetrated.

Huddled around the small stove we dried our soaked shoes, prepared a warm supper and then crawled into our beds to get warm. Next morning when we awoke warm and comfortable we touched the canvass of the tent and found it frozen stiff. On stepping outside we found the ground frozen, and as we

looked back up the valley our former camp was white with snow. A roaring campfire soon made all within its reach a scene of comfort, and when Old Sol came over the mountains and peeped into our valley, cold, damp, discomfort, restlessness and snow disappeared at his magic touch. That, however, is another story and another day.

Bombus Gelidus Cress, Bombus Kincaidii Ckll.

By H. L. Viereck.

By request of Prof. Cockerell, I have compared the types of the above and a ♂ *gelidus* determined by Prof. Cockerell. Believing them to be distinct, I submit the following tabular arrangement of the different characters:

kincaidii.	*gelidus.*
♀	♀
Flagellum thicker, first joint one-fourth its length longer than the second.	Flagellum more slender, first joint one-third its length longer than the second.
Pale, pubescence absent on vertex.	Pale pubescence present on vertex.
Segments 1–2–3 of abdomen entirely covered with pale pubesence, the hair on the remaining segments almost black.	First abdominal segment with pale pubescence, second and third segments each with two patches of brown pubescence, which almost form a transverse band, some black hairs to the sides and the front of these patches, fourth segment with pale hair, interrupted in the middle by a patch of black hairs; apex of abdomen with dark, almost black hairs.
♂	♂
Flagellum thicker, first joint a little longer than the second, but not distinctly. Abdomen almost entirely covered with pale hairs, some black hairs mixed with the pale ones on the apical half.	Flagellum more slender, first joint distinctly longer than the second, about one-fourth its length. First segment of abdomen with pale hairs, second and third segments with brownish hairs, the rest of the abdomen with pale hairs mixed with black, except laterally where they are pale.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., FEBRUARY, 1903.

HOW VALUABLE WORK MAY BE DONE.

Too much importance is given to established names by beginners and collectors. Many are in a position to find out the comparative value of specific names in the literature. There is one caution, however, and that is on no condition should a name be put into the synonymy until its identity with another name is proven beyond a doubt. It is a mistake also, to sink a name without the fullest explanation of the reasons, therefore, a catalogue or a mere list, is not a proper place. As examples of how good work may be done the following are cited. An entomologist in Georgia says he believes *Satyrus pegala* and *alope* are one and the same species, and asks our opinion. According to our present state of knowledge the presumption is that they are different. They do not fly in the vicinity of Philadelphia and they are common in Georgia. We respectfully invite and request our Georgia friend to put the matter on a scientific basis for all time. It is also probable that *Terias jucarola* and *delia* are the same species. They should be separately listed until proven the same. A few days ago an entomologist wished to know the difference between *Anisota senatoria* and *virginiensis*. He said one of these species had been found by him in the imago state in New Jersey by the thousand. Here was an opportunity lost. He should have collected some hundreds and studied the individual variations. Have we two species in these two names? How can the males

be separated? How can the larvæ be differentiated? Does one represent a seasonal brood of the other? There are many interesting problems in regard to our butterflies and moths that can only be accurately solved by studies in the field by persons living where the species in question are abundant. The biological studies are most interesting, and the student of these problems should prove or disprove the work of the closest naturalist, who is governed by what he sees, and if he has the "*mihi itch*" there is no telling what he may see. It is hopeless to expect the systematic worker to put genera like *Cicindela* or *Argynnis* on a firm footing, and yet the individual who lives where the things fly, depends on the systematist for names, or at best does not give the latter the benefit of knowledge which the field worker could or should readily acquire.

We received $1.00 mailed on January 11th from Washington, D. C. The subscription blank was not filled out. Please send your name and receive credit.

Mr. Merrick's plate of *Haploa* in the last NEWS should be an object lesson to the Sloppydopterist.

Notes and News

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

QUEER CAUSE FOR DIVORCE.—Wife says her husband made her catch bugs.—Because her husband forced her to catch bugs, although she was deathly afraid of them, Mrs. Fanny Welch, of Baltimore, Md., sued for a limited divorce. At the time of their marriage Mr. Welch was in the employ of the United States Geological Survey. While in Dennison, Tex., Mrs. Welch said, her husband took a notion to collect beetles, centipedes, tarantulas, and all sorts of bugs and insects. Despite her horror of such things, he would make her go with him and help to catch them. He would keep the insects in their room, she said, and when they escaped at night he would compel her to catch them. The court granted her a decree.—NEWSPAPER.

I HAVE just completed a preliminary revision of the species of *Nonagria* and would be glad to see material from all sections of the country prior to publication. Will name and return promptly all specimens sent me by correspondents.—JOHN B. SMITH, New Brunswick, N. J.

NEW MEXICO is a fine place in which to collect insects, and if you don't think the following doggerel is a base slander, consult PROF. COCKERELL:

"And the Devil said it was all he needed
To start a new Hell, and then he proceeded.

He scattered tarantulas along the roads,
Put thorns on the cactus and horns on the toads.
He mixed up the sand with millions of ants,
So those who sit down need half-soles on their pants,
He lengthened the horns of the Texas steer,
And put an addition to jack-rabbit's ear.

He quickened the step of the broncho steed,
And poisoned the feet of the centipede.
He put Juajalota in all the lakes,
And under the rocks hid rattlesnakes.
The wild boar roams through the chapparell,
It's a mighty poor place he's got for a hell."

IN THE NEWS for December I notice that at the meeting of the Harris Club in Boston, several members reporting having seen *Vanessa milberti* near Boston during October. It may be of interest to know that the insect was also seen in Providence. I captured a fine specimen on October 19, 1902, in my flower garden, hovering over the blossoms. The insect appeared to be entirely fearless, settling down on the flowers beside me as I was picking them for a bouquet. This is the first I have ever taken or seen in the few years that I have been collecting, and I should judge it is rather uncommon in this locality. Mr. E. D. Keith also reports taking one a few days before in his garden.—JAMES E. BILLSON, Providence, R. I.

Doings of Societies.

A meeting of the Chicago Entomological Society was held in the John Crerar Library, December 18, 1902.

Nine members were present. Mr. Longley in the chair.

Mr. Kwiat, treasurer, reported a balance of $23.08 on hand.

President Longley read a review of the Society's progress for the year, which was heard with much interest.

It was moved by Mr. Adams that the Society affiliate with the Chicago Academy of Natural Sciences. Mr. Kwiat voted the motion out of order, on the ground that it disagreed

with the constitution, which states that such action could not be taken without previous notice having been sent to each member.

It was duly moved and seconded that action be postponed until the January meeting and notice be given by the secretary. Passed.

A resolution was presented by Mr. Kwiat and passed by the Society extending thanks to the John Crerar Library for the comfortable and pleasant room provided for its meetings. On account of the lateness of the hour election of officers was postponed until the January meeting.

JOHN COMSTOCK, *Secretary.*

The Entomological Society of Washington, at its 174th regular meeting, on Thursday, January 8, 1903, elected the following officers: President, D. W. Coquillet; first vice-president, Nathan Banks; second vice-president, A. D. Hopkins; recording secretary, R. P. Currie (re-elected); corresponding secretary, Frank Benton (re-elected); treasurer, J. D. Patten (re-elected); executive committee, the foregoing officers and H. G. Dyar, L. O. Howard (re-elected), and C. L. Marlatt (re-elected).

At the December meeting of the Feldman Collecting Social, held at the residence of Mr. H. W. Wenzel, 1513 S. 13th St., Philadelphia, ten persons were present.

Mr. Busck stated that most of the types of *Tineidæ* described by Clemens had been found in the collection of the American Entomological Society. It had been supposed that these types were lost or destroyed, and the present discovery will prove of great value to students of the group.

Prof. Smith spoke of a similar discovery of the types of Grote and Robinson.

The probable spread of the gypsy moth was discussed by Messrs. Smith and Ballou. Mr. Ballou referred to a former report of the appearance of the moth in Connecticut, but on investigation the report was found to be incorrect.

Dr. Castle, on behalf of Mr. Bland, reported that a large *Sphinx* was captured on October 24 in Philadelphia, having apparently just emerged from the chrysalis.

Prof. Smith showed a map of New Jersey illustrating the distribution of the periodical cicada. The various broods in New Jersey were dwelt on, and their position described. The brood during 1902, abundant in the northern counties, did not occur in South New Jersey, except in spots where the brood of 1894 did not exist.

Mr. Daecke stated that *Tettigea hieroglyphica* was very abundant at Da Costa, N. J., in July, 1901, but was quite scarce during 1902.

In reply to Mr. Daecke, Prof. Smith said there are two forms of *Cicada septendecim*, the typical, and a smaller form called *cassini*, the latter having quite a different note from the larger one.

Cicada septendecim was further discussed by Messrs. Smith, Wenzel, Daecke, Busck, Laurent and Johnson.

Mr. Laurent exhibited eleven species of *Sphingidæ* collected at Miami, Florida, during latter part of April and early in May. He called attention especially to *Darapsa porcus*, *Hemeroplanes pseudothyreus* and *Thoxates pergesa*.

Mr. Laurent reported that Mr. Wm. Davis had raised *Tenodera sinensis* on Staten Island from egg-masses sent him some time ago.

Prof. Smith said that he had distributed egg-masses of this species in New Jersey, and the insects had since been reported in various localities in the State.

Mr. Johnson exhibited some *Leptidæ* on which he had been working. Particulars will be found elsewhere in the NEWS.

WILLIAM J. FOX, *Secretary*.

The sixth regular quarterly meeting of the Pacific Coast Entomological Society was held on the evening of November 15th at the residence of Dr. F. E. Blaisdell, 1800 O'Farrell Street, San Francisco.

President Fuchs in the chair. Ten members responded to roll call. Six visitors were present.

It was decided to obtain entomological literature for the Society by the sale or the exchange of insects.

James Cottle read a paper titled "My trip to Shasta," giving a list of his captures, as follows: *Argynnis monticola* and *purpurascens; Melitæa palla, whitneyi* and *leanira; Vanessa californica; Satyrus*, two new forms; *Chionobas californica; Thecla californica, grunus, halesus, sæpium* and *nelsoni; Lycæna heteronea, pulla, dædalus* and *anna; Neophasia menapia; Colias chrysomelas; Parnassius clodius* and *smintheus; Pamphila comma* and a new form; *Hemaris cynoglossum; Nisoniades perseus; Sphinx sequoiæ; Epicallia ochracea; Arctia ornata; Pyrrharctia isabellæ; Pseudohazis eglanterina* and *shastensis* variations and aberrations of the same.

Dr. E. C. Van Dyke read a very interesting account of the collectors and collections he met and studied while recently visiting the Atlantic Coast.

Dr. F. E. Blaisdell read a paper upon Capt. Casey's "Revision of the Coccinellidæ," with criticisms and suggestions for the remedy of certain difficulties encountered in applying the same.

Mr. F. W. Nunenmacher exhibited a collection of *Coccinellidæ* and species of other families; Mr. Edw. Ehrhorn a collection of Coleoptera from Bolivia, S. A.; Mr. F. Grinnell a box of Lepidoptera collected at Pasadena. Social discourse.

Adjournment.

F. E. BLAISDELL, *Secretary*,
1800 O'Farrell St., S. F.

The November meeting of the Newark Ent. Society was held November 9, 1902. It was called to order by President Buchholz, thirteen members being present. Visitor, Mr. Richard Barth.

Election of officers resulted as follows: Mr. Angelman for president, Mr. Stortz for vice-president, Mr. Buchholz for secretary, Mr. Seib for treasurer, Mr. Brehm, curator of Lepidoptera; Mr. Dickerson, curator of Coleoptera; Mr. Broadwell, librarian.

Prof. Smith reported that *Sphinx catalpæ* had made its way east as far as the Atlantic Ocean. He also reported in regard to mosquitoes that Mr. Brehm has discovered three new species between the Passaic and Raritan Rivers. Meeting adjourned. GEORGE STORTZ, *Secretary pro tem.*

The December meeting of the Newark Ent. Society was held December 14, 1902, President Angelman presiding. Fifteen members present. Visitors were Mr. Schaeffer, of Brooklyn, and Mr. Keller, of Newark. The minutes of the previous meeting were read and approved.

Prof. Smith reported for Mr. W. T. Davis, of Staten Island, the capture of specimens of *Homoglæa carnosa* at Lakehurst, N. J., on huckleberry, the autumn colored leaves of which it most beautifully mimics, this species being new to New Jersey. Also *Catocala herodias*. Time of capture, September. Prof. Smith gave a little lecture on mosquitoes, and requested the members to catch for him during winter all the specimens they can find in cellars and woodsheds to ascertain what species hibernate as adults, very little being known about this point.

Mr. Dickerson exhibited a box of mounted mosquitoes, containing all the known species of New Jersey.

Prof. Smith consented to give a lecture on mosquitoes before an invited public in Newark, under the auspices of the Society.

A committee of six—Messrs. Herpers, Seib, Angelman, Broadwell, Dickerson and Brehm—was appointed by the chair to procure suitable quarters for same. Adjournment

OTTO BUCHHOLZ, *Secretary.*

The meeting of the Newark Ent. Society was held at Turn Hall, January 11, President Angelman presiding, and eleven members present.

The minutes were read and adopted.

Mr. Kearfott spoke about finding larvæ of *Tineidæ* in the stalks of plants during winter.

The genus *Nonagria* (Lep.) was subject of the day's discussion. Specimens were poorly represented, only one species being definitely known to occur in the State, viz.: *subflava*. The only male was shown by Mr. Buchholz.

Prof. Smith said that *N. oblonga* is the male of *N. subflava*, the latter being the proper name for it. He further stated that the larvæ could be found during summer in the stalks of cat-tails, imago coming late and eggs hibernate in rolled up leaves.

Mr. Henry Rummel, of Plainfield, was proposed for membership and unanimously elected.

OTTO BUCHHOLZ, *Secretary*.

A meeting of the Entomological Section of the Academy of Natural Sciences of Philadelphia was held November 20, 1902. In the absence of the Director and Vice-Director, Mr. C. Few Seiss presided. Fifteen persons were present. Two hundred *Hymenoptera* from Costa Rica (purchased) were exhibited.

Dr. Skinner exhibited a new species of *Melitæa* from Colorado.

Dr. Calvert exhibited two new species of Odonata, and also new to the New Jersey list. One is a *Somatochlora*, two specimens having been taken; one from Formosa Bog, about five miles from Mt. Pleasant (Calvert), and one from DaCosta in July (Daecke). It is a very high flyer, being wary and difficult of capture. The other species is also known from two specimens. One had been taken by E. Daecke at Manumuskin; the other is in the Museum of Comparative Zoology at Cambridge, Mass., and came from Enterprise, Florida. The species probably belongs to a genus not hitherto found in the United States, being South American. The species has a very long abdomen.*

Mr. Viereck presented some new records, as follows: *Paranothyreus hilaris* Sm. one ♀. Castle Rock, Pa. (Viereck), Da Costa, N. J., May 18, 1902 (Daecke), previously known from Illinois, Florida and Texas. *Blepharipus harringtonii* Fox.; heretofore only represented by the unique type from Ottawa,

* Both these species are described in this number of the NEWS, see page 33.—EDS.

Canada (Harrington); two ♀ ♀ Montgomery Co., Pa, July 14, 1892 (C. W. Johnson); Lehigh Gap, Pa, June 29, 1901 (Viereck). *Blepharipus nigrior* Fox; one ♀, Lehigh Gap, Pa, June 29, 1901; previously only represented by the unique type from New Jersey. The specimen measures 6 5 mm., the type is 5 mm. long. This example shows the sculpture of the metathorax subject to variation, in that it has the space between the median area of the metanotum and the lateral lines of the enclosed space, simply largely pitted. The speaker thought it would be a good thing to have a special place in the NEWS for new records.

Dr. Calvert said he made two entries in the NEWS index for each new species or addition.

Mr. Viereck read a letter from Prof. W. M. Wheeler, in which the latter advocated mounting ants on cards and never on pins. The cards should be wide enough to support both thorax and abdomen.

Dr. Skinner suggested using two card points like those used for small Coleoptera. The tip of one point going to middle of thorax and the other to middle of the abdomen, both from one pin. This method would not obscure any part of the insect.

Mr. Bradley mentioned that *Linoceras junceus* had been bred from a *Eumenes* taken at Mt. Gretna, Pa., by Prof. Easton, who referred the specimen to Dr. Calvert.

Mr. Herman Hornig said *Actias luna* does not emerge relative to the time it pupates. He gave the loss of weight during the pupa period as two to five grains. The largest and smallest ♂ cocoons weighed 39 grains and 30 grains respectively. The largest ♀ cocoon and the smallest weighed respectively 40 and 33 grains. He also spoke on the retardation of emergence so as to secure mating.

Mr. Rehn said some German investigations along these lines had been recently published.

Mr. C. B. Hardenberg was elected an associate.

At the meeting held December 18, 1902, the following were elected officers for 1903: Director, Philip Laurent; Vice-Director, H. W. Wenzel; Treasurer, E. T. Cresson; Recorder

and Conservator, Henry Skinner; Secretary, C. W. Johnson; Publication Committee, C. W. Johnson, J. H. Ridings.

HENRY SKINNER, *Recorder*.

A meeting of the American Entomological Society was held December 18, 1902. Dr. Calvert, president, in the chair. Eighteen persons were present. The president announced the death of M. Tosquinet, the president of the Entomological Society of Belgium on October 20, 1902.

The Curator exhibited the Clemens types of Tineina as arranged by Mr. August Busck. It was unanimously voted to extend the thanks of the Society to Mr. Busck for this valuable piece of work.

Mr. Bradley exhibited under the microscope the mouth parts of the Ichneumonid, *Agathobanchus æquaticus* Say. The labium has a tubular form like that of a bee.

Mr. Rehn exhibited a new Locustid from Costa Rica, representing a new genus and species. The characters of the venation were given. He also showed a new species of cricket from Albuquerque, New Mexico. Two specimens of *Temnopteryx major* from Chestertown, Md., were exhibited. The species has hitherto been unique.

Mr. Johnson showed specimens of *Acrocera*, and spoke of the larvæ living in abdomens of spiders. *Acrocera fasciata* Wied. had been reared from *Lycosa stonei*. Many spiders, perhaps 25%, are thus parasitized. Mr. Johnson said the specimen exhibited by Mr. Bradley was taken by himself on flowers.

The following persons were elected to serve as officers for 1903: President, P. P. Calvert; Vice-president, H. W. Wenzel; Treasurer, E. T. Cresson; Curator, Henry Skinner; Recording Secretary, Henry Skinner; Corresponding Secretary, C. W. Johnson; Librarian, J. C. Bradley; Executive Committee, P. Laurent, H. W. Wenzel, C. W. Johnson; Finance committee, J. W. McAllister, C. S. Welles, D. M. Castle; publication committee, E. T. Cresson, C. F. Seiss, B. H. Smith.

HENRY SKINNER, *Secretary*.

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Wanted.—Live pupæ of all kinds of native Sphinx in exchange for good papered material as *A. angulifera*, *Sp. luscitiosa* and others. George Kircher; 573 Germania Ave., Jersey City Heights, N. J.

Lepidoptera.—Have many fine things from the West and South to exchange. Lists solicited. John & Hurd Comstock, 1572 Ridge Avenue, Evanston, Ill.

Lepidoptera.—I have 200 to 300 species to offer in exchange. Prefer mounted specimens. A. Kwiat, 701 Larrabee St., Chicago, Ill.

Lepidoptera.—Wanted for cash or exchange. Living pupæ of North American Lepidoptera. Am. Ent. Co., 1040 De Kalb Avenue, Brooklyn, N. Y.

Lepidoptera.—Wanted pupæ of North American species for cash or exchange. American Ent. Co., 1040 De Kalb Ave., Brooklyn, N. Y.

Lepidoptera.—I desire exchange with collectors in all parts of North America, particularly Northwest and Southwest. No exotics. John L. Healy, 1137 Pratt Ave., Chicago, Ill.

I wish to secure, at once, specimens of all forms of *Satyrus alope* and *pegala* from all parts of U. S., accompanied by complete data. Will give good exchange or cash. John L. Healy, 1137 Pratt Ave., Chicago, Ill.

Will exchange California specimens *Attacus ceanothi* cocoons, etc., for flies caught in other places that also inhabit California.—J. E. Cottle, 1520 Pacific Avenue, San Francisco.

Coleoptera.—Gustav Krech, Bartenstein, East Prussia, Germany, wants American Coleoptera in exchange for European.

Coleoptera.—Civillehrer Barkowski, Bartenstein, East Prussia, Germany, wants American Coleoptera in exchange for European.

Wanted.—Rept. Entom. N. J., 1899.—Rept. U. S. Dept. Agri., 1887.—Separata of articles on Hymenoptera; also *Cossus*, *Hepialus*, *Micropteryx*, *Cis*, *Cupes*, *Parandra*, *Rhyssodes*. ♀ of *Methoca*, *Myrmosa*, *Chyphotes*; Chrysids; Bees and Wasps, *Melanoplus collinus*, *rectus*, ♂ *punctulatus*; *Dictyophorus*, *Asemoplus*, *Paralytolropidia*, *Haldemanella*, *Dactylotum*, *Ligurotettix*, *Morsea*.—W. H. Patton, Hartford, Conn.

Butterflies.—Good ones. From West Texas, Colorado and Missouri. One hundred species in duplicate. Also a few rare Catocalæ. Exchange for butterflies and Catocalæ of N. A.—G. M. Dodge, Louisiana, Mo.

N. A. Lepidoptera and their living pupa wanted. Will give in exchange exotic Lepidoptera.—Denton Brothers, Wellesley, Mass.

Will collect to order, next summer, insects of Guadalajara, Mexico.—J. F. McClendon, 3200 Guadalupe Street, Austin, Tex.

I have a complete set and index of Insect Life, also some odd numbers to exchange for works on Coleoptera not in my library.—L. H. Joutel, 164 East 117th Street, N. Y.

Lepidoptera.—I would like to exchange fertile eggs of *Catocala electa* and *nupta* for others of same genus.—Carl Ilg, 2539 Douglass Street, Philadelphia.

Lepidoptera—Odonata.—Wish to secure specimens of Butterflies and Dragonflies from North Carolina, of species not in my lists or collections. Correspondence invited.—Franklin Sherman, Jr., Dept. Agr., Raleigh, N. C.

Wanted.—North American *Geometridæ*, eastern and southern species (many of the commonest). Offered Lepidoptera, Coleoptera and Hemiptera, many good species, from British Columbia.—Geo. W. Taylor, Wellington, B C.

Catocala Andromache.—Will be supplied in exchange to a few of the larger collections while my duplicates last. O. C. Poling, Quincy, Illinois.

Please Notice.—After October 15th, 1902, my address will be College Station, Brazos Co., Texas.—E. Dwight Sanderson.

Wanted.—Geometers, named or unnamed, in exchange; also noctuids and Microlepidoptera.—Wm. H. Broadwell, 275 High St., Newark, N. J.

Lepidoptera.—I would like to correspond and exchange with some new beginners. I have live cocoons of *Telea polyphemus and Samia cecropia* to exchange for cocoons of others, especially cocoons of *Cynthia* and *Luna* moths.—J. N. Lang, 104 Bunker St., Chicago, Ill.

Desired.—Pupæ and perfect specimens of North American Lepidoptera, for cash or exchange. The Kny-Scheerer Co., Department of Natural Science, 225-233 Fourth Ave., N. Y. City, N. Y

Notonectidæ and Aquatic Hemiptera.—Wanted from New York State especially; and in general from the United States. Write me stating what you want in return. J. R. de la Torre Bueno, 437 Central Park West, New York.

Lepidoptera.—I have *Thecla spadix*, *Calephelis nemesis*, *Lyc. sornorensis*, *Pamphila errans*, *Hemaris thetis* and other California butterflies to exchange for *Lycænidæ* and *Bombycidæ*. Fordyce Grinnell, Jr., Box 1034, Palo Alto, California.

Aphides.—I desire to obtain living aphides or plant lice. Can give named or unnamed Massachusetts insects of any order except Lepidoptera in exchange. C. T. Brues, Zoological Laboratory, Columbia University, New York City.

For Exchange.—Coleoptera of Southwestern Penna., in sets of four, with data for Coleoptera or Lepidoptera. Send lists, T. N. Brown, Uniontown, Pa.

Wanted.—Cerambycidæ (Longicorns) of the Americas. State number, price and locality. Fred. C. Bowditch, 164 Rawson Rd., Norfolk Co., Mass.

Coccids and Bees.—Correspondents are requested not to send me specimens for identification without first asking permission. My time is very limited, and I cannot work up all sorts of miscellaneous material. —T. D. A. Cockerell, East Las Vegas, N. M.

Pupæ Exchange.—Crysalids of H. Maia and others; also cocoons to exchange for other native pupæ and cocoons. W. T. Buxton, 152 Walnut St., Somerville, Mass.

Wanted.—Cocoons *Attacus angulifera*, *ceanothi*, *gloveri*, *A. luna*, *E. imperialis*, to exchange for butterflies and moths. *Catocala* in papers from Illinois.—Adolf Mares, 1671 W. 23d St., Chicago, Ill.

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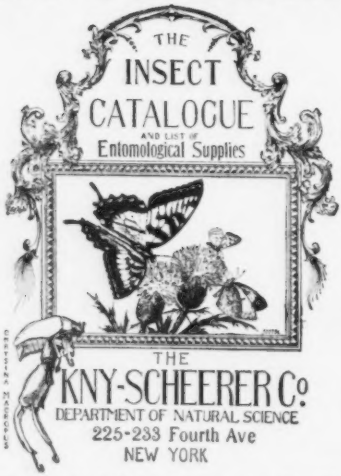

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